

REMARKS

Claims 1-49 are pending in the Application.
Claims 3-7, 23-29, 36-38 stand rejected.
Claims 7 has been objected to.

As an initial point, the Applicant wishes to thank the Examiner for the thorough review of the claims. In response to the Examiner's office action, the Applicant requests that the Examiner carefully consider the following:

I. Election/Restriction

Due to a previous election made with traverse, claims 8-21, 30-35, 39-49 were deleted without prejudice.

II. Priority

The Examiner stated that the "Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date." In response, the Applicant has inserted another claim for priority into the specification.

III. Claim Objection

The Examiner has objected to Claim 7 because "homoiothermal" is misspelled. The Applicant respectfully traverses this rejection. The word "homoiothermal" is not misspelled, but is a word known to those skilled in the art. It means "maintaining a uniform temperature." See Attachment 1, 2, and 3. Thus, the Applicant requests that this objection be withdrawn.

IV. Claim Rejections under 35 U.S.C. §112

Claims 1-7, 22-29, and 37-38 were rejected under 35 U.S.C. 112. The Applicant has modified these claims accordingly. Because these modifications are related to form, they have not narrowed the claims. Consequently, they are not narrowing amendments related to patentability.

V. Rejection under 35 U.S.C. § 102

Claim 1 -6:

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,763,263 to Dehlinger ("Dehlinger-263").

Claim 1 recites:

1. (Amended) An integrated support comprising:
at least one base member,
a variety of substances for detection of a predetermined chemical structure, said variety of substances being fixed side by side at intervals along the length of said base member, and said base member is integrated so that a layer surface in which the substances are fixed and are adapted to be formed in the direction of the length of said base member and a fixed location of each substance in the layer surface identifies the chemical structure,
wherein the shape of the at least one base member is selected from the group consisting of a thread shape, a string shape, a tape shape, a rod shape, and a long and slender shape,
wherein the means for integration is selected from the group consisting of rolling, laminating, or arranging, and
wherein each substance is fixed at a location, the location is selected from the group consisting of: on the surface of the base member, at channels in the base member, at apertures in the base member, and in the base member.

The PTO provides in MPEP § 2131 that

"[t]o anticipate a claim, the reference must teach every element of the claim...."

Therefore, with respect to claim 1, to sustain this rejection the Dehlinger-263 patent must contain all of the above claimed elements of the claim. However, Dehlinger-263 does not disclose all the elements of claim 1. Specifically, Dehlinger-263 only discloses the apparatus where the various substances are fixed *to the inner surfaces* of tubes. Furthermore, within one capillary tube of Dehlinger-263, only one sort of substance for detection (corresponding to DNA) are fixed as shown in Figs. 7A, 7B, 7C, and 8, hence, a variety of substances for detection are not fixed side by side at intervals along the length of said base member. Additionally, Dehlinger-263 does not disclose any elements corresponding to the base member of claim 1. Therefore, the

rejection is not supported by the Dehlinger-263 reference and should be withdrawn. Dependent claims 2 through 6 depend from and further limit independent claim 1, and therefore are allowable as well.

Claim 22 -29:

Claim 22 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,763,263 to Dehlinger ("Dehlinger-263").

Claim 22 recites:

22. A method of manufacturing an integrated support, comprising a positioning step for positioning and fixing substances for detection of predetermined chemical structures at predetermined locations on at least one base member at intervals, and an integration step for rolling, laminating or arranging said base member to give integration, so that a layer surface in which the substances for detection are fixed, and the location of the substances for detection is selected from the group consisting of: on the surface of the base member, at channels in the base member, or at apertures in the base member, and in the base member, when the base member is made from a material selected from the group consisting of: a porous material, a form material, a fibrous material, a material with an irregular surface, or an impregnating material.

The PTO provides in MPEP § 2131 that

"[t]o anticipate a claim, the reference must teach every element of the claim...."

Therefore, with respect to claim 22, to sustain this rejection the Dehlinger-263 patent must contain all of the above claimed elements of the claim. However, Dehlinger-263 does not disclose all the elements of claim 22. Specifically, Dehlinger-263 only discloses the apparatus where the various substances are fixed *to the inner surfaces* of tubes. Furthermore, within one capillary tube of Dehlinger-263, only one sort of substance for detection (corresponding to DNA) are fixed as shown in Figs. 7A, 7B, 7C, and 8, hence, a variety of substances for detection are not fixed at intervals where the location is selected from the group consisting of: on the surface of the base member, at channels in the base member, or at apertures in the base member, and in the base

member. Additionally, Dehlinger-263 does not disclose any elements corresponding to the base member of claim 22.

The Office Action states that Dehlinger-263 discloses a method of manufacturing an integrated support comprising a positioning step for positioning and fixing substances on at least one base member and integration steps for arranging said base members to give integration and location of the respective substances. In other words Dehlinger-263 arranges the tubes (Column 8, lines 17-33) and positions and fixes the substances in the tubes (Column 8, line 57-Column 9, line 49). However, the way of integration of substances of claim 22 is distinct from that of Dehlinger-263 because with Dehlinger-263, the integration of the substances is carried out by only arranging the tubes fixing a sort of substances therein in matrix form. Furthermore, in Dehlinger, plural sorts of substances must be arranged within each tube along the length. This is in contrast to the limitations of claim 22.

Therefore, the rejection is not supported by the Dehlinger-263 reference and should be withdrawn. Dependent claims 23 through 29 depend from and further limit independent claim 22, and therefore are allowable as well.

Claim 36:

Claim 36 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,856,174 to Lipshutz et. al. ("Lipshutz"). Claim 36 has now been amended to depend from claim 22. Thus, claim 36 is now in an allowable condition.

Claim 37-38:

Claim 37 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,759,779 to Dehlinger ("Dehlinger-759").

Claim 37 recites:

37. (Amended) A method of using an integrated medium, comprising:

a processing step for detecting a substance conducting processing using an integrated support, an integrated minute vessel, or a permeable membrane, and

a measurement step for conducting measurements of an optical state on an outside layer surface with the processed integrated support, integrated minute vessel, or permeable membrane, either in an expanded state or in an integrated state.

The PTO provides in MPEP § 2131 that

"[t]o anticipate a claim, the reference must teach every element of the claim...."

Therefore, with respect to claim 37, to sustain this rejection the Dehlinger-759 patent must contain all of the above claimed elements of the claim. However, Dehlinger-759 does not disclose all the elements of claim 37. Specifically, Dehlinger-759 only discloses a measurement step where measurements are conducted at the *inner surfaces* of tubes. Therefore, the rejection is not supported by the Dehlinger-759 reference and should be withdrawn. Dependent claim 38 depend from and further limit independent claim 37, and therefore are allowable as well.

VI. Rejection under 35 U.S.C. § 103

Claim 7

Claim 7 was rejected under 35 U.S.C. § 103 as being unpatentable over Dehlinger-263 in view of Lipshutz. Applicant traverses this rejection on the grounds that these references are defective in establishing a prima facie case of obviousness with respect to claim 7.

Claim 7 incorporates the limitations of modified claim 1. As discussed above, Dehlinger-263 does not contain all of the limitations of claim 1. Furthermore, Lipshutz does not provide these limitations. Thus, all of the limitations are not taught by the combination of Dehlinger-263 and Lipshutz.

As the MPEP teaches:

A prima facie showing of obviousness requires the Examiner to establish, inter alia, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the

Examiner must provide a motivation or suggestion to combine or modify the prior art references to make the claimed inventions.

MPEP 2143.03.

Since all the limitations of claim 7 cannot be met by the combination of Lipshutz and Dehlinger-263, as discussed above, it is impossible to render the subject matter of claim 7 obvious. Specifically, Dehlinger-263 only discloses the apparatus where the various substances are fixed *to the inner surfaces* of tubes. Furthermore, within one capillary tube of Dehlinger-263, only one sort of substance for detection (corresponding to DNA) are fixed as shown in Figs. 7A, 7B, 7C, and 8, hence, a variety of substances for detection are not fixed at intervals where the location is selected from the group consisting of: on the surface of the base member, at channels in the base member, or at apertures in the base member, and in the base member. The Applicant, therefore, respectfully requests that this rejection be withdrawn.

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why the Dehlinger-263 and Lipshutz patents cannot be applied to reject claim 7 under 35 U.S.C. § 103.

Section 2142 of the MPEP also provides:

...the examiner must step backward in time and into the shoes worn by the hypothetical person of ordinary skill in the art when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed "as a whole".

Here, neither Delinger-263 nor Lipshutz teaches, or even suggests, the desirability of the combination since neither teaches the specific arrangement and location of the variety of substances as claimed in claim 1 (and incorporated into dependent claim 7).

Thus, it is clear that neither patent provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. § 103 rejection.

Claim 26

Claim 26 was rejected under 35 U.S.C. § 103 as being unpatentable over Dehlinger-779 in view of U.S. Patent Application No. 2002/0015952 of Anderson et. al. ("Anderson"). Applicant traverses this rejection on the grounds that these references are defective in establishing a prima facie case of obviousness with respect to claim 26.

Claim 26 incorporates the limitations of modified claim 22. As discussed above, Dehlinger-779 does not contain all of the limitations of claim 22. Furthermore, Anderson does not provide these limitations. Thus, all of the limitations are not taught by the combination of Dehlinger-779 and Anderson.

As the MPEP teaches:

A prima facie showing of obviousness requires the Examiner to establish, inter alia, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art references to make the claimed inventions.

MPEP 2143.03.

Since all the limitations of claim 26 cannot be met by the combination of Anderson and Dehlinger-779, as discussed above, it is impossible to render the subject matter of claim 26 obvious. Specifically, Dehlinger-779 only discloses the apparatus where the various substances are fixed *to the inner surfaces* of tubes. Furthermore, within one capillary tube of Dehlinger-779, only one sort of substance for detection (corresponding to DNA) are fixed as shown in Figs. 7A, 7B, 7C, and 8, hence, a variety of substances for detection are not fixed at intervals where the location is selected from the group consisting of: on the surface of the base member, at channels in the base member, or at apertures in the base member, and in the base member. The Applicant, therefore, respectfully requests that this rejection be withdrawn.

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why the Dehlinger-779 and Anderson references cannot be applied to reject claim 21 under 35 U.S.C. § 103.

Section 2142 of the MPEP also provides:

...the examiner must step backward in time and into the shoes worn by the hypothetical person of ordinary skill in the art when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed "as a whole".

Here, neither Anderson nor Dehlinger-779 reference teaches, or even suggests, the desirability of the combination since neither teaches the specific arrangement and location the variety of substances as claimed in claim 22 (and incorporated into dependent claim 26).

Thus, it is clear that neither patent provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. § 103 rejection.

VII. Double Patenting Rejection

The Examiner has also rejected claim 1 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/909,186. In response, the Applicant has filed a terminal disclaimer.

VIII. Conclusion

As a result of the foregoing, it is respectfully asserted that the all the claims in the Application are in a condition for allowance. Should the Examiner deem that any further amendment is desirable to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the below listed telephone number.

Attorney Docket No. 10287.41
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Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE
PURSUANT TO 37 C.F.R. 1.121(c)(ii)

1. (Amended) An integrated support comprising:
at least one [thread shaped, string shaped, tape shaped, or rod shaped long and slender] base member,
[and] a variety of substances for detection of predetermined chemical structure,
said variety of substances being [which are] fixed side by side at intervals along the length of said base member, and said base member is integrated so that a layer surface in which the substances are fixed and are adapted to be formed in the direction of the length of said base member and [rolled, laminated or arranged to give integration, so that] a fixed location of each substance in the layer surface identifies [for detection corresponds to] the chemical structure, [thereof.]
wherein the shape of the at least one base member is selected from the group consisting of a thread shape, a string shape, a tape shape, a rod shape, and a long and slender shape,
wherein the means for integration is selected from the group consisting of rolling, laminating, or arranging, and
wherein each substance is fixed at a location, the location is selected from the group consisting of: on the surface of the base member, at channels in the base member, at apertures in the base member, and in the base member.
2. (Amended) The [An] integrated support according to claim 1, wherein the material of the [said] base member is selected from the group consisting [provided with cavity sections comprising a channel either with or without a bottom, an aperture, or a capillary, or holding sections] of a porous material, a foam material, a fibrous material, a material with an irregular surface, or an impregnating material[, and moreover wherein said substances for detection are fixed to said cavity sections or holding sections].

3. (Amended) An integrated support according to claim 1 or claim 2, wherein said base member is rolled, laminated or arranged in such a way that the base member either enables or prevents expansion, while bringing side portions thereof into contact with each other or while maintaining a spacing or while sandwiching an auxiliary member.
5. (Amended) An integrated support according to claim 1 or claim 2, further comprising a binding section for binding said base member and/or an auxiliary member in such a way that the auxiliary member is either releasable or non-releasable.
22. (Amended) A method of manufacturing an integrated support, comprising a positioning step for positioning and fixing substances for detection of predetermined chemical structures at predetermined locations on at least one base member at intervals, and an integration step for rolling, laminating or arranging said base member to give integration, so that a layer surface in which the substances for detection are fixed, and the location of [respective substances for detection and the chemical structures are made to correspond] the substances for detection is selected from the group consisting of: on the surface of the base member, at channels in the base member, at apertures in the base member, and, in the base member when the base member is made from a material selected from the group consisting of: a porous material, a foam material, a fibrous material, a material with an irregular surface, or an impregnating material.
23. (Amended) A method of manufacturing an integrated support according to claim 22, wherein the shape of said base member is selected from the group consisting of [formed from] a thread shape [shaped], a string shape [shaped], a tape shape [shaped], [or] a rod shape, and a [shaped] long and slender shape [member].
24. (Amended) A method of manufacturing an integrated support according to claim 22 or claim 23, wherein in said positioning step, [each] a suspension or semiliquid incorporating a substance for detection with a predetermined chemical structure, is

positioned by being painted, dispensed, imprinted, drawn up, impregnated or stored onto said base member at a location which corresponds to the chemical structure.

25. (Amended) A method of manufacturing an integrated support according to claim 22 or claim 23, wherein in said integration step said base member is rolled, laminated or arranged in such a way that the base member either enables or prevents expansion while bringing said base member into contact with itself or while maintaining a spacing or while sandwiching an auxiliary member to give integration.

26. (Amended) A method of manufacturing an integrated support according to claim 22 or claim 23, wherein said base member is formed as a film or thin sheet, said substances for detection are positioned on said base member in approximate lines which do not intersect or contact the other substances, and said integration step involves rolling, laminating or arranging in a way that the base member either enables or prevents expansion to give integration, and wherein a cutting step is provided following said integration step, in which the integrated base member on which said substances for detection are fixed, is sliced thinly to form a plurality of integrated supports in which the cross-sectional surface of the cut functions as a layer surface.

27. (Amended) A method of manufacturing an integrated support according to claim 22 or claim 23, wherein in said positioning step each suspension or semi-liquid incorporating a substance for detection with a predetermined chemical structure, is positioned by being painted, dispensed, imprinted, drawn up, impregnated or stored onto said base member, or, into [a plurality of cavity sections of] channels, apertures [or capillaries, or into holding sections having], a porous material, a foam material, a fibrous material, a material with an irregular surface or an impregnating material, provided with said base member.

28. (Amended) A method of manufacturing an integrated support according to claim 22 or claim 23, wherein in said integrating step said base member and/or auxiliary member are bound in such a way that the auxiliary member is either releasable or non-releasable.

36. (Amended) A method of using an integrated medium according to claim 22, wherein by passing a heating fluid or a cooling fluid through an integrated support, an integrated minute vessel, or a permeable membrane, the integrated support, integrated minute vessel, or permeable membrane is heated or cooled respectively.

37. (Amended) A method of using an integrated medium, comprising:
a processing step for detecting a substance [conducting processing] using an integrated support, an integrated minute vessel, or a permeable membrane, and
a measurement step for conducting measurements of an optical state on an outside layer surface with the processed integrated support, integrated minute vessel, or permeable membrane, either in an expanded state or in an integrated state.

38. (Amended) A method of using an integrated medium according to claim 37, wherein the measurement in said measurement step with said integrated support, integrated minute vessel, or permeable membrane in an integrated state involves identification of an absolute location on the outside layer surface thereof.